Amendments to the Claims

1. (Currently Amended) A method to determine a nucleotide at a polymorphic locus in a nucleic acid sample, comprising the steps of:

amplifying a region of DNA comprising a polymorphic locus in the sample to form amplified DNA products using a primer pair, wherein a first primer of the pair terminates at its 3' end at the polymorphic locus, wherein the first primer comprises a 3' portion which is complementary to the region of DNA and wherein the first primer terminates at its 5' end with a 5' portion which is identical in sequence to all or part of a probe on a solid support and not complementary to the region of DNA, to form a first strand and a second strand, wherein the first strand comprises a portion identical to all or part of the probe and the second strand comprises a 5' portion complementary to all or part of the probe;

labeling the amplified DNA products to form labeled amplified DNA products;

hybridizing the labeled, amplified DNA products to the probe on the solid support such that the second strand hybridizes to the probe on the solid support; and

detecting labeled, amplified DNA products hybridized to the probe on the solid support, wherein the presence of said labeled amplified DNA products on the solid support indicates that the nucleic acid sample contains at the polymorphic locus a nucleotide which is the same as the 3' terminal nucleotide of the primer.

2. (Original) The method of claim 1 wherein the step of labeling couples a labeled nucleotide to a 3' end.

3. (Original) The method of claim 1 wherein terminal transferase catalyzes the step of labeling.

4. (Currently Amended) The method of claim ~~1~~ 2 wherein the nucleotide is fluorescently labeled.

5. (Currently Amended) The method of claim ~~1~~ 2 wherein the nucleotide is radioactively labeled.

6. (Currently Amended) The method of claim ~~1~~ 2 wherein the nucleotide is enzymatically labeled.

7. (Currently Amended) The method of claim ~~1~~ 2 wherein the nucleotide is epitopically labeled.

8. (Original) The method of claim 4 further comprising the step of:

optically detecting fluorescent label on the solid support.

9. (Original) The method of claim 8 wherein two primer pairs are employed, wherein the first primer of each of the first and second pairs of primers terminate at their 3' ends in distinct nucleotides, and wherein each 5' portion of each of said first primers is identical in sequence to all or part of a distinct probe at a known location on the solid support.

10. (Previously Amended) The method of claim 8 wherein quantities of fluorescent label at known locations on the solid support are compared, wherein the known locations represent different allelic forms of the polymorphic locus having different nucleotides at the polymorphic locus, thereby determining a ratio of nucleotides at the polymorphic locus in the sample.

11. (Original) The method of claim 10 wherein the ratio of nucleotides at two or more polymorphic loci are determined simultaneously.

12. (Original) The method of claim 1 wherein the sample comprises DNA from two or more individuals.

13. (Original) The method of claim 1 wherein two or more regions of DNA, each of which comprises a polymorphic locus, are amplified in a single reaction mixture.

14. (Original) The method of claim 1 wherein the solid support is beads.

15. (Original) The method of claim 1 wherein the solid support is a microtiter dish.

16. (Original) The method of claim 1 wherein the solid support is a high density array.

17-22. (Cancelled)

23. (Currently Amended) A method to prepare samples for analysis to determine a nucleotide at a polymorphic locus in a nucleic acid sample, comparing the steps of

amplifying a region of DNA comprising a polymorphic locus in the sample to form amplified DNA products using a primer pair, wherein a first primer of the pair terminates at its 3' end at the polymorphic locus, wherein the first primer comprises a 3' portion which is complementary to the region of DNA and wherein the first primer terminates at its 5' end with a 5' portion which is identical in sequence to all or part of a probe on a solid support and not complementary to the region of DNA to form a first strand comprising a portion identical to all or part of the probe and a second strand which comprises a 5' portion complementary to all or part of the probe;

labeling the amplified DNA products to form labeled amplified DNA products; and

hybridizing the labeled, amplified DNA products to the probe on the solid support such that the second strand hybridizes to the probe on the solid support, thereby forming prepared samples for analysis.

24. (Previously Added) The method of claim 23 wherein the step of labeling couples a labeled nucleotide to a 3' end.

25. (Previously Added) The method of claim 23 wherein terminal transferase catalyzes the step of labeling.

26. (Currently Amended) The method of claim ~~23~~ 24 wherein the nucleotide is fluorescently labeled.

27. (Currently Amended) The method of claim ~~23~~ 24 wherein the nucleotide is radioactively labeled.

28. (Currently Amended) The method of claim ~~23~~ 24 wherein the nucleotide is enzymatically labeled.

29. (Currently Amended) The method of claim ~~23~~ 24 wherein the nucleotide is epitopically labeled.

30. (Previously Added) The method of claim 26 further comprising the step of:

optically detecting fluorescent label on the solid support.

31. (Previously Added) The method of claim 30 wherein two primer pairs are employed, wherein the first primer of each of the first and second pairs of primers terminate at their 3' ends

in distinct nucleotides, and wherein each 5' portion of each of said first primers is identical in sequence to all or part of a distinct probe at a known location on the solid support.

32. (Previously Added) The method of claim 30 wherein quantities of fluorescent label at known locations on the solid support are compared, wherein the known locations represent different allelic forms of the polymorphic locus having different nucleotides at the polymorphic locus, thereby determining a ratio of nucleotides at the polymorphic locus in the sample.

33. (Previously Added) The method of claim 32 wherein the ratio of nucleotides at two or more polymorphic loci are determined simultaneously.

34. (Previously Added) The method of claim 23 wherein the sample comprises DNA from two or more individuals.

35. (Previously Added) The method of claim 23 wherein two or more regions of DNA, each of which comprises a polymorphic locus, are amplified in a single reaction mixture.

36. (Previously Added) The method of claim 23 wherein the solid support is beads.

37. (Previously Added) The method of claim 23 wherein the solid support is a microtiter dish.

38. (Previously Added) The method of claim 23 wherein the solid support is a high density array.